Virginia

COASTAL PROGRAM
Goals and Accomplishments

The Virginia Coastal Resources Management Program, known by its partners as the Virginia Coastal Program, was established in 1986 as a network of state laws and policies through which the Commonwealth of Virginia manages sand dunes, wetlands, underwater lands, fisheries, point and nonpoint source air and water pollution, shoreline sanitation, and a variety of other areas of particular concern such as coastal wildlife habitats and public access, waterfront redevelopment and underwater historic sites.

These policies are administered by a network of state agencies: Marine Resources Commission, the Department of Environmental Quality, Department of Game and Inland Fisheries, Department of Conservation and Recreation, Virginia Department of Health and the Chesapeake Bay Local Assistance Department. Other agencies participating in the Program include: Department of Historic Resources, Department of Forestry, the Virginia Institute of Marine Science, Department of Transportation, Economic Development Partnership, Virginia Institute of Marine Science, and Department of Agriculture and Consumer Affairs. DEQ serves as the lead agency for this networked Coastal Program and helps agencies and localities to develop and implement coordinated coastal policies.

Virginia's coastal zone encompasses 44 Tidewater counties and cities, Virginia's Atlantic coast watershed as well as parts of the Chesapeake Bay and Albemarle/Pamlico Estuary watersheds.

Since 1986, the Commonwealth has received almost $40 million in federal funds, matched by over $35 million in state and local funds, to implement its Coastal Program. As a "maximum-funded state" Virginia receives about $3 million annually. Additional Coastal Program efforts supported by these funds and not detailed in this report, include the following areas:

Coastal Technical Assistance:
- ✓ *local environmental planning by regional planning district commissions and state agencies*

Enforcement:
- ✓ *wetlands and dunes permit compliance and inspection by local governments and the state*

Environmental Management:
- ✓ *Business and Industry Guide to Environmental Regulations*
- ✓ *natural resource mapping efforts*
- ✓ *Elizabeth River Project Watershed Action Plan*

Habitat and Monitoring:
- ✓ *Annual Chesapeake Bay Submerged Aquatic Vegetation Survey*
- ✓ *shorebird habitat protection*

Land Acquisition:
- ✓ *New Point Comfort in Mathews County*
- ✓ *Dragon Run tract in King and Queen County*
- ✓ *North Landing Natural Area Preserve in Virginia Beach*
- ✓ *Northwest River Natural Area Preserve in the City of Chesapeake*
- ✓ *Kiptopeke State Park expansion in Northampton County*
- ✓ *habitat preservation areas on Virginia's Eastern Shore*

Local Government Planning and Comprehensive Plans:
- ✓ *Gloucester County Creative Rural Development Program*
- ✓ *Appomattox River Corridor Study*
- ✓ *Northern Neck Land Use Tracking and Mapping System*

Ten Goals of the Virginia Coastal Program and Accomplishments

Goal # 1: To protect and restore coastal resources, habitats and species of the Commonwealth. These include, but are not limited to, wetlands, subaqueous lands and vegetation, sand dune systems, barrier islands, underwater or maritime cultural resources, riparian forested buffers, and endangered or threatened species.

Since 1991 the Coastal Program has helped to acquire and preserve 1,802.88 acres of sensitive and significant coastal lands, including wetlands, sand dune systems, lowland and upland riparian buffers, and other wildlife habitat areas. Above is the 161acre addition to Kiptopeke State Park funded by the Virginia Coastal Program.

- Virginia's coastal zone contains all 310,813 acres of the commonwealth's **tidal wetlands**, and 909,097 acres (approximately 80%) of the state's **nontidal wetlands**. Protection of this resource is an important element of the Coastal Program. As a consequence of a study undertaken by the Virginia Coastal Program, the legislature granted the Virginia Marine Resources Commission new authorities to issue restoration orders, require scientific monitoring to assure adequate restoration, and levy civil fines for violations of the Wetlands and Subaqueous Lands Acts. The Commission now applies these penalties for violations such as unpermitted docking facilities, boat ramps, and bulkheads and unauthorized or improperly undertaken dredging. The Virginia Institute of Marine Science, College of William and Mary (VIMS), with Coastal Program funding, has developed legal and educational materials that are being used by all 35 local wetlands boards. VIMS also produces a Wetlands Newsletter and holds regular workshops and seminars for board members, local governments and others interested in wetland management. In addition, boardwalks over wetlands funded by the Coastal Program include signage explaining the values of wetlands to the general public. Virginia is committed to increasing the amount of wetlands in preservation status. State parks, natural area preserves, wildlife management areas and unclaimed tidal lands currently protect 34,700 acres of wetlands.

Public Access Planning and Construction:
- ✓ *boardwalk and hawk observatory in Kiptopeke State Park*
- ✓ *dune crossovers in the Town of Cape Charles*
- ✓ *harbor improvements in the Town of Wachapreague*
- ✓ *nature and canoe trails on the Elizabeth River and West Neck Creek*
- ✓ *Alton's Creek Boardwalk on the North Landing River*
- ✓ *public access plans for the Dragon Run , Potomac River, and Mayo Island*

Public Education:
- ✓ *A Guide to the Bay Act*
- ✓ *Virginia Erosion and Sediment Control Field Manual*
- ✓ *Bayscapes and native plants brochures*
- ✓ *wetlands training and education*

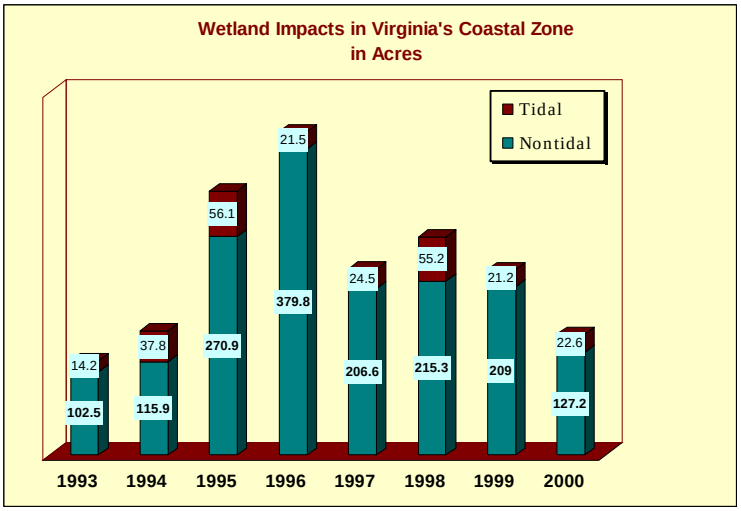
Shoreline Management:
- ✓ *shoreline management BMP's*
- ✓ *sediment suspension studies*

Special Area Management Planning:
- ✓ *Northampton County*
- ✓ *Virginia's Southern Watershed Area*
- ✓ *Dragon Run Watershed Area*

Wetlands:
- ✓ *Virginia Wetlands Management Handbook*
- ✓ *Virginia Wetlands Guidelines*
- ✓ *tidal and nontidal wetlands surveys and mapping*
- ✓ *wetlands planning and policy*

Water Quality:
- ✓ *water quality modeling*
- ✓ *Virginia Citizen Water-Quality Monitoring Program*
- ✓ *fecal coliform library*
- ✓ *Chesapeake Bay Preservation Area Program implementation and mapping by Virginia's Bay localities*
- ✓ *stormwater and groundwater studies*
- ✓ *Polecat Creek Watershed Project*

- In 2000, the Virginia General Assembly passed legislation that created an independent **nontidal wetlands program** at the Virginia Department of Environmental Quality, and built on the Commonwealth's existing Virginia Water Protection Permit. Key changes included the provision of additional jurisdiction over: excavation in all wetlands, impacts in isolated wetlands, filling or dumping, activities in a wetland that cause drainage or significantly alter or degrade existing wetland acreage or function, and permanent flooding or impounding. Since this program and the new regulations took full force in 2001, there has been a halt to Tulloch ditching in Virginia, and the state has been able to require avoidance, minimization and compensation for impacts to isolated wetlands. In order to support the program's goal of no net loss of wetland acreage and function, the Coastal Program is providing funding to the Virginia Institute of Marine Science to develop new methods for tracking, and improving, wetlands mitigation. These new "protocols" will provide the program with a tool to determine the cumulative impacts of wetlands management on a watershed basis and to evaluate the long-term effectiveness of wetlands mitigation based on current compensation ratios.



- Virginia is fortunate in that the majority of its **barrier islands** are protected either by state or federal ownership or by The Nature Conservancy. Nevertheless, development on available barrier islands led the Virginia Marine Resources Commission, responsible for management of this resource, to revise and strengthen its Barrier Island Policy to better protect both this important resource and those investing on these lands. The policy restricts development to single family residential dwellings and places tight restrictions on the location of development and on vehicle access to the barrier islands.

***Bayside dunes** in Kiptopeke State Park and the Town of Cape Charles on Virginia's Eastern Shore are protected by dune crossovers – a series of boardwalks over the park's and Town's dune systems - funded by the Virginia Coastal Program.*

- Virginia has **coastal dune resources** on about 48 miles of shoreline. An inventory, now underway by the Virginia Institute of Marine Science, is part of an ongoing Virginia Coastal Program effort to establish a better understanding of dune systems, including primary, secondary, coastal and riverine dunes. The inventory includes where they are located, how they should be defined, and how they function in the natural environment. The goal is improved management to ensure that both the habitat and flood protection benefits derived from these naturally occurring and rare systems are maintained.

- The Virginia Coastal Program has played a lead role in coordinating **riparian buffer** restoration efforts in Virginia's coastal zone, and has helped plant over 6 miles in Tidewater Virginia. Revegetation on over 30 publicly-owned sites has helped demonstrate restoration techniques to private landowners, as well as the benefits of using low maintenance native plants. These efforts have contributed to the Commonwealth's participation in a 1996 goal adopted by the Chesapeake Bay Program Executive Council of planting 2,010 miles of riparian forest buffers throughout the entire Chesapeake Bay watershed by the year 2010. Virginia's share of that goal is set at 610 miles and we fully expect to meet that goal. Funding from the Coastal Program to its partner the Virginia Institute of Marine Science, College of William and Mary, has resulted in development of a

riparian forest restoration protocol for the Rappahannock watershed. This protocol maps the current distribution of riparian forests in the watershed, and evaluates this distribution with respect to current land use patterns and the potential impacts reforestation would have on water quality in the watershed.

The Virginia Coastal Program designed a riparian buffer sign to emphasize the importance of riparian buffer restoration in the coastal watershed. The sign, available to all groups and organizations planting buffers in Virginia's coastal zone, links buffer restoration sites throughout Tidewater Virginia, providing the public with a consistent message on the benefits of riparian buffers. At York River State Park, a new buffer, planted on a steep denuded slope, protects the park's marsh and the York River beyond.

- In 2002, a 121-acre **tract along the Dragon Run in King and Queen County** has been **purchased** through a Virginia Coastal Program grant and **will be incorporated into the Virginia Estuarine and Coastal Research Reserve System**. The tract includes approximately 3000 feet of riverfront, 75 acres of 20-23 year old loblolly pine forest, 3 acres of mixed pine-hardwood, and 43 acres of forested wetlands. The tract also boasts hardwood swamps of cypress, gum, sycamore, river birch and red maple. The College of William and Mary holds title to the parcel, which will be used for research, long-term monitoring and education and managed by the Virginia Institute of Marine Science in coordination with the Chesapeake Bay National Estuarine Research Reserve System.

Goal # 2: To restore and maintain the quality of all coastal waters for human and ecosystem health through protection from adverse effects of excess nutrients, toxics, pathogens and sedimentation.

- In 2001, Virginia received full approval of its Coastal Nonpoint Pollution Control Program from NOAA and EPA. This approval makes Virginia eligible to retain full funding under the Coastal Zone Management Act and Section 319 of the Clean Water Act.

  Following are some of the projects, carried out in part with funding from the Coastal Program that contributed to the approval of Virginia's NPS Program:
  - A series of workshops on the proper use of irrigation systems and development of informational material on irrigation best management practices;
  - Development of a web-enabled database for use by local government to track erosion & sediment control activities; development of a model local stormwater ordinance; and an economic evaluation of incorporating BMPs into site design;
  - Development of shorelands planning protocol for use by local governments to enhance planning capabilities for areas adjacent to shorelands;
  - A statistical analysis of the impact of channelization activities and dams in Tidewater Virginia on instream & riparian habitat;
  - A plasticulture guidebook for local government and farmers recommending practices to protect water quality for operations using plastic mulch;
  - Development of the Virginia Clean Marina Program to provide technical assistance to marinas and recreational boaters.

- Studies have shown that an increasing number of recreational boaters support efforts to prevent and reduce pollutants from entering Virginia's waterways, and that higher occupancy rates exist at marina's where BMPs have been put into place. In 2001, marina operators, marine industry representatives and state officials launched the **Virginia Clean Marina Program** (VCMP). The Program is a voluntary initiative designed to educate and give technical support and special recognition to marinas that implement Best Management Practices (BMP's) that go above and beyond regulatory requirements, minimizing potentially negative impacts on

water quality and coastal resources. The VCMP is a joint effort between the Virginia Coastal Program, which funds the VCMP through a grant to the Department of Conservation and Recreation, and Virginia Sea Grant. A Marina Technical and Environmental Advisory Committee (MTEAC), made up of representatives from Virginia's coastal network of state agencies, the marine trade industry, and the recreational boating and environmental communities, directs development of the Virginia Clean Marina Program, and produced a Virginia Clean Marina Guidebook. Designated marinas fly the Virginia Clean Marina flag. As of the spring of 2003, eleven (11) marinas were awarded Virginia Clean Marina Designation. Twenty (20) marinas have pledged to participate in the program and are working toward designation.

- *"We as marina operators have been given the opportunity to avoid more government regulations by voluntarily adopting and implementing best management practices and common sense approaches to improving and maintaining water quality and living resources. I liken the Virginia Clean Marina designation to the "star" rating system used for hotels. Boaters will come to look for facilities that have been awarded the designation because they'll know they can expect certain things when they go there," states Pete Hall, President of the Tidewater Marine Trade Association.*

- Funding from the Virginia Coastal Program has been key to the development of **nutrient reduction strategies in Virginia's Chesapeake Bay tributaries**. The 1987 Chesapeake Bay Agreement included a goal of reducing the flow of nutrients into the bay by 40 percent (of 1985 levels) by the year 2000 to improve water quality and protect living resources. More than 20 Coastal Program grants to state and local agencies, totaling over $1.2 million, helped Virginia educate and involve local governments and the public in decision-making and development of strategies to reduce nutrients to Virginia's coastal waters. The effect of this cooperative strategy effort was passage of the Virginia Water Quality Improvement Act of 1997, resulting in a total of $92.31 million in funding and accrued interest (FY 97 – FY 2001) towards reduction of nonpoint source pollution.

Goal # 3: To protect air quality.

- Virginia's Department of Environmental Quality has made it a priority to provide information about Virginia's **air quality programs and status on the Web**. This information includes daily ozone forecasts and data, which color codes Virginia's air quality index for the most urban, populated areas in the Commonwealth. The agency also formed the **Air Quality Impact Study Group** to assist the Department of Environmental Quality in evaluating the combined impacts of air emissions from existing and proposed sources on air quality. The group's objectives are to: develop a description of air quality and water supply factors that should be evaluated during environmental impact reviews and air and water permit reviews; identify methods or tools that are available to meaningfully measure or predict these impacts; identify options to use this information in evaluating impacts; identify the costs of measuring, predicting and evaluating impacts; and, identify options for meeting these identified costs.

- A primary air quality focus in the Commonwealth is **reducing emissions from vehicles** in heavily populated Northern Virginia. Vehicle owners in the Northern Virginia counties, as well as regular commuters into the area and vehicles operating on federal installations, are subject to the emissions inspection program. A vehicle's inspection date is based on the registration deadline, and the state's Department of Motor Vehicles notifies owners six to eight weeks before an inspection is due. DMV can complete vehicle registration only after the inspection has been passed or a waiver has been issued. If the vehicle does not pass the inspection, necessary repairs must be made.

Goal #4: To reduce or prevent losses of coastal habitat, life and property caused by shoreline erosion, storms and other coastal hazards in a manner that balances environmental and economic considerations.

- The Virginia Coastal Program funded a number of publications to address shoreline stabilization and erosion and sediment control. A brochure produced by the Virginia Marine Resources Commission and the Virginia Institute of Marine Science (VIMS) ***- Shoreline Erosion Problems?: Think Green -*** helps ensure that property owners are aware of nonstructural alternatives to shoreline erosion. The brochure illustrates how using marsh grasses not only protects their property but benefits water quality and wildlife. This brochure has been very popular among property owners making reprints

necessary. A field version of **Virginia's Erosion and Sediment Control Handbook** was developed by the Virginia Department of Conservation and Recreation at the request of many individuals, businesses and government agencies. Over 4,000 copies of the handbook have been distributed in the coastal areas of Virginia; and, another VIMS publication titled **Shoreline Management in Chesapeake Bay** describes and illustrates specific, practical response to shoreline management issues. It looks at how the physical environment, man-made constructions, and land-use patterns impact one another, and presents solutions to management problems with an eye to cost-effectiveness, sound construction, coastal hazards, property loss, habitat preservation and water quality.

Goal #5: To provide for sustainable wild fisheries and aquaculture.

- In 1999, the Virginia Coastal Program launched a bold initiative to capitalize on recent advances to restore oyster reefs in the Chesapeake Bay by the Virginia Marine Resources Commission and others. The Coastal Program established a partnership of Virginia state agencies, federal agencies, nonprofit organizations and business groups to form the **Virginia Oyster Heritage Program**. This Program has marshaled the collective resources of its partners toward a large-scale oyster restoration effort. It served as a catalyst for a Baywide commitment for a 10-fold increase in oyster populations by 2010, and helped galvanize a Baywide strategy to meet this commitment. Other states have shown interest in the Virginia Oyster Heritage Program model of partnership and reef restoration. Maryland has approached reef restoration in its portion of the Chesapeake Bay with a reef construction model similar to Virginia's.

  The goals of the Virginia Oyster Heritage Program are to: *(1)* construct 3-dimensional (6-8 feet tall) oyster broodstock sanctuary reefs; *(2)* create harvest enhancement areas by spreading a 10 inch deep layer of shell around the broodstock sanctuary reefs, *providing a sustainable fishery for Virginia watermen*; *(3)* monitor reefs to determine their success in increasing oysters, water clarity and biodiversity; *(4)* and provide educational materials on the oyster restoration effort and train and use volunteers for reef restocking efforts, including oyster gardening.

  To date, the Virginia Oyster Heritage Program has constructed nine major reefs in the Rappahannock River, several in Tangier Sound, and others in Hampton Roads and on the seaside of the Virginia's Eastern Shore. Hundreds of acres of enhanced harvest area have been cleaned and improved by the addition of live oysters and cultch. All nine sanctuary reefs in the lower Rappahannock River have received excellent spatsets, and have significant populations of oysters. All of the enhanced harvest areas also received a very good spatset. Recorded spatset on the tidal seaside reefs was extremely high in 2000. Long term survivability of sanctuary reef oysters is still unknown. Mortality due to oyster diseases remains high. However another main element of the VOHP is monitoring and evaluating the success of these reef building efforts in order to improve our restoration practices. A study by the Virginia Institute of Marine Science, College of William and Mary, is currently investigating oyster survival on varying reef surfaces.

In 2002, the Virginia Coastal Program was selected as a semi-finalist for the prestigious **Innovation in American Government Award**, given by Harvard's Kennedy School of Government, for creating the Virginia Oyster Heritage Program. The Innovations Awards recognize outstanding examples of creative problem solving in the public sector.

"Omar of the Reef", mascot of Virginia Oyster Heritage Program, is modeled by a young visitor during one of many VOHP exhibits tours in Virginia's coastal communities.

Local government, citizen and federal support for the Virginia Oyster Heritage Program have grown since the dedication of the program in March 1999. In all, the Virginia Oyster Heritage Program has raised over $10 million and facilitated the largest, targeted restoration effort that has ever been undertaken in the Chesapeake Bay.

- The Virginia Marine Resources Commission received Coastal Program funding to develop a three-dimensional aquaculture permit program for consideration by the Virginia General Assembly. Through this funding, the Commission also developed and implemented a General Permit for Noncommercial Shellfish growing activities.

Goal #6: To promote sustainable ecotourism and to increase and improve public access to coastal waters and shorefront lands compatible with resource protection goals.

- The Virginia **Coastal Birding and Wildlife Trail**, supported by the Virginia Coastal Program and ISTEA funds, uses existing roadways to link natural areas and wildlife watching sites throughout Virginia's coastal zone, capitalizing on Virginia's unique natural resources to generate eco-tourist dollars for the Commonwealth's coastal communities. Working with other mid-Atlantic states, the Virginia Trail could be a critical link in a larger Mid-Atlantic Coastal Birding Trail. Virginia's Trail is modeled after the Great Texas Birding Trail. Virginia's Department of Game and Inland Fisheries worked with Texas coastal resource managers in development of the trail. As a growing number of nature tourists spend their time and money along the Virginia Trail, communities will want to invest in and conserve the natural resources that are attracting tourism dollars. Public access enhancements along the trail are encouraged. The site selection and planning process has already created new partnerships among government agencies, local industries, land managers, community leaders, bird watchers and conservation organizations. *A 100-page trail guide has been completed for the Coastal Phase of the trail, including detailed descriptions of sites and loops, maps travel directions and contact information. The guide is accessible on the Web at http://www.dgif.state.va.us/wildlife/vbwt/*

  - *"The partnerships that the Virginia Coastal Birding and Wildlife Trail has developed are tremendous," notes David Whitehurst, Director of DGIF's Wildlife Diversity Division which oversees the trail's development. "Coastal Program funding is critical in supporting efforts like this."*

In 2001, a Northumberland County citizen attended the dedication of the Great Wicomico Pubic Fishing Pier and took the spotlight with the first catch from the pier – a 2 lb croaker. The pier had only been open for 15 minutes! The pier, the first for Northumberland County, is one of many public access features funded by the Virginia Coastal Program since 1986. Every member of the County's Board of Supervisors and Planning Commission as well as a member of the Virginia Senate and House of Delegates were on hand for the dedication ceremony. Signs at the new pier credit NOAA and the Virginia Coastal Program for funding the new pier.

- The Virginia Coastal Program brought together ecotour operators, resource managers and scientists to discuss and foster creation of a voluntary ecotour guide certification program. These meetings resulted in the establishment of the **Virginia EcoTourism Association**. VETA's mission is to: protect Virginia's natural resources; develop, promote and market a professional ecotourism industry; and promote safe, quality experiences for ecotravelers. The Program also spearheaded and funded the development of a curriculum for Ecotour Guide Certification. This training for guides could reduce use conflicts and inadvertent damage to animals, plants and natural areas that is often associated with tourism, and will provide certified ecotour guides with a marketing edge over their non-certified competitors. A dry run of the course was conducted in 2001, and courses will be offered by the Virginia Institute of Marine Science, Collage of William and Mary, under contract with the Virginia Coastal Program, in November of 2003.

Goal #7: To promote renewable energy production and provide for appropriate extraction of energy and mineral resources consistent with proper environmental practices.

- Funding and technical assistance from the Virginia Coastal Program helped make the **nation's first eco-industrial park** possible. The Cape Charles Sustainable Technologies Park, centered on brownfields in the Town of Cape Charles on Virginia's Eastern Shore is a showcase for innovative companies in renewable energy, clean water technologies and industrial symbiosis. Park tenants agree to covenants and sustainability criteria aimed at zero emissions of pollutants, maintenance of native vegetation and wildlife habitat, and social equity.

Building One, the first building in the Sustainable Technology Park. The stormwater retention and filtration pond is in the foreground.

The 31,000 square foot park has integrated photovoltaics producing 50 kilowatts of solar power and has a "silver" rating from the US Green Building Council. Habitat protection and restoration was also considered in the park's design. The Virginia Coastal Program secured a grant from the U.S. Fish and Wildlife Service for a habitat preserve within the park, and funded a nature trail and boardwalk in the preserve. Over 100 Cape Charles residents contributed to the design of the park, which is integrated within the Cape Charles community. The Park is a component of a Special Area Management Plan in Northampton County funded by the Virginia Coastal Program.

- The Virginia Coastal Program and the Department of Environmental Quality's Pollution Prevention Program teamed up with the Virginia Housing and Environment Network, Department of Mines Mineral and Energy, Virginia Housing and Community Development and others to conduct a **biennial statewide conference on sustainability**: *Virginia's Sustainable Future: Solutions for Business, Community and the Environment*. Over 1000 community, business and government representatives participated in conferences in 1999 and 2001 to celebrate successes and chart the future of sustainable development in Virginia.

Goal #8: To ensure sustainable development on coastal lands and support access for water-dependent development through effective coordination of governmental planning processes.

- The Southern Watershed Area (SWA), located in Southeastern Virginia, is one of the most biologically diverse regions in the state. The SWA is the focus of the Virginia Coastal Program's second Special Area Management Plan effort. The **Southern Watershed Area Management Program** (SWAMP), coordinated by the Hampton Roads Planning District Commission, is focused on the development of new and enhanced enforceable policies that balance protection of the significant natural resources in the SWA with opportunities for continued economic and residential development. One of the most significant accomplishments under SWAMP is the development of a Memorandum of Agreement between the federal, state and local agencies involved in the wetlands mitigation process. The MOA identifies a set of conservation corridors in the SWA and establishes a methodology for enhancing the site selection process when off-site mitigation is necessary. A second significant focus area under SWAMP has involved efforts to improve environmental

stewardship when new development takes place in the SWA. Randall Arendt, a nationally recognized planning expert, was hired as a consultant to critique the development controls currently used by Chesapeake and Virginia Beach and to develop site plans for conservation subdivisions in the two cities. Mr. Arendt worked directly with a developer in Chesapeake and a modified version of Mr. Arendt's site plan is currently in the development review process in Chesapeake. Chesapeake is also in the process of reviewing its subdivision ordinance and is considering the inclusion of a conservation subdivision section based on Mr. Arendt's recommendations. In addition, other localities in the Hampton Roads Planning District have expressed an interest in the work of Mr. Arendt.

- *"The Southern Watershed Area Management Program has provided valuable assistance to the Cities of Chesapeake and Virginia Beach and the Hampton Roads Planning District Commission in meeting the goals of Virginia's Coastal Program. The project has resulted in the development of progressive environmental policy that will serve as a prototype for solving difficult environmental planning problems in southeastern Virginia." Eric Walberg, Principal Planner, HRPDC*

- **Environmentally sensitive site design**, which can minimize land disturbance, preserve indigenous vegetation and minimize impervious surface and runoff, is the objective of a handbook – *Better Site Design* - developed by Virginia's Chesapeake Bay Local Assistance Department with funding from the Coastal Program. The handbook provides Virginia-specific site design techniques and outlines "model development principles" for consideration by local planners, developers, citizen groups, design professionals, and policy makers to change the standard approach to site design. The results can be more environmentally sensitive, economically viable, and locally appropriate development. Careful site design and layout are also an integral part of addressing the Chesapeake Bay Preservation Act, which was incorporated into Virginia's Coastal Program in 2000. The Model Development Principles were adapted from a series of 22 nationally endorsed principles. A workshop hosted by CBLAD for local government officials included a presentation on four Virginia case studies illustrating the economic and water quality benefits of using the better site design techniques. All 84 of Virginia's coastal localities received the better site design publication. CBLAD also conducted a follow-up study, with funding from the Coastal Program, of the *Impediments to Better Site Design*.

The Eastern Shore Birding Festival, an educational component of the Northampton Special Area Management Plan, celebrated its 10th year in October 2002. The Virginia Coastal Program initiated this festival to help educate the public about the significance of the southern tip of the Delmarva Peninsula as a migratory bird corridor.

- Northampton County is the site of the first special area management plan developed by the Virginia Coastal Program to stimulate **sustainable economic growth while protecting precious natural resources**. Northampton County, although a rural community with a depressed economy, is brimming with a wealth of unique natural and cultural resources. The SAMP was developed to preserve bird and fish habitats, control cumulative and secondary impacts of coastal development by maintaining maximum vegetative cover of wildlife habitat and nutrient uptake, maintain a sense of place and quality, and to develop responsible heritage tourism, aquaculture and other sustainable industries. One of the successes of the SAMP, the Port of Cape Charles Sustainable Technologies Park was mentioned earlier. As a result of the work completed by this SAMP, including an interagency effort to collect and scientifically document migratory bird habitat needs, a groundwater ordinance and a habitat or vegetation protection overlay district ordinance will be considered by the Northampton County Board of Supervisors in the summer of 2003. If adopted, these ordinances would maximize vegetative cover for wildlife as well as benefit water quality and land value.

- The Dragon Run is not only treasured for its central role in the Middle Peninsula's natural and cultural identity, it is also a geographic centerpiece. The watershed expands outward from a 40-mile fresh and brackish water stream which runs through Essex, Gloucester, King and Queen and Middlesex Counties, encompassing 90,000 acres or 140 square miles. Its expansive acreage aside, the future of the watershed is a growing concern. The same richness and diversity of resources valued by those living in, studying and visiting the watershed makes it susceptible to the pressures of unsustainable development. A new plan is now being developed to help guide what lays ahead for this exceptional wilderness area – the **Dragon Run Special Area Management Plan**. The

Dragon Run Special Area Management Plan, like the Northampton SAMP and Southern Watershed SAMP is a tool used by the Virginia Coastal Program to protect significant coastal resources when all levels of government are committed to a collaborative planning process that produces enforceable environmental protection policies. SAMPs are often used in areas that are already under tremendous development pressure. The Dragon Run SAMP is being put in place *before* significant environmental damage has occurred. This requires foresight on the part of the people involved with the SAMP to develop progressive policies and recommendations that will *preserve* the quality of life in the Dragon Run, while steering the area towards development that *sustains* that quality of life. A Dragon Run Steering Committee and Dragon Run SAMP Advisory Group, representing a cross-section of the community, including elected officials, Steering Committee members, other landowners, business/industry, nonprofits, state agencies, and educators is developing action plans to achieve the SAMP's goals and objectives. The action plans may include: changes to local zoning ordinances; amendments to local comprehensive plans; development and distribution of educational materials; promotion of the community benefits of natural resources, farming, and forestry; and natural resource data collection to support the development and implementation of action plans.

- "*The mission of the Dragon Run SAMP is to support and promote community-based efforts to preserve the cultural, historic, and natural character of the Dragon Run, while preserving property rights and the traditional uses within the watershed," explains David Fuss, the SAMP's Project Manager at the Middle Peninsula Planning District Commission (MPPDC)*

Goal #9: To avoid and minimize coastal resource use conflicts through research, planning and a forum for coordination and facilitation among government agencies, interest groups and citizens.

- In 2001, representatives from a broad range of local, state and federal agencies, including the United States Army Corps of Engineers, United States Coast Guard and the United States Fish and Wildlife Service, gathered in Virginia Beach to sign a **Memorandum of Agreement (MOA) to improve water use conflict education** for the North Landing River. The MOA outlines recommended water use areas to minimize conflict between the diverse set of recreational and commercial users of the River. In addition, the use areas are intended to aid in protection of the valuable wetland ecosystem that surrounds the river by minimizing damage by watercraft. The MOA is part of the Southern Watershed Area Management Program (SWAMP) mentioned above. The MOA includes a Water Use Plan Map for the North Landing River that depicts the areas of the River that are best suited for Low Impact Recreation, General Recreation and Special Use/High Speed Recreation. Implementation of the MOA included development of educational materials for inclusion in boater safety programs and installation of signs with the Water Use Plan Map at launch areas. In addition, a survey of boaters on the North Landing River will be performed both before and after implementation of the educational program to determine its effectiveness.

- Increasing the public's awareness of protected marine species in Virginia was the basis for funding from the Virginia Coastal Program to a project called "**Respect Wildlife**". The "Respect Wildlife" curriculum was incorporated into basic boating and personal watercraft education classes in Virginia. According to Jeff Decker, a Virginia Department of Game and Inland Fisheries Boating Safety Coordinator, the number of people taking boater Safety classes is increasing each year. The "Respect Wildlife" curriculum, as well as the educational materials related to marine animals, and **marine animal and boater interaction** distributed by the Virginia Marine Science Museum, has reached thousands of boaters and others sharing Virginia's waters with wildlife.

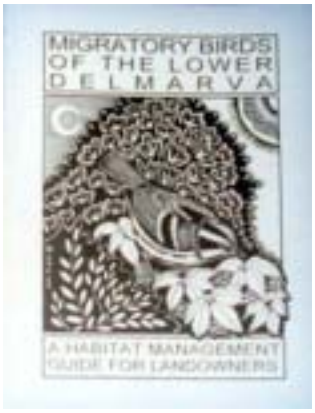
  - *"Direct contact is one of the best avenues to inform boaters about responsibilities they have when operating a boat near marine mammals. Instructors and students alike enthusiastically accepted the outstanding reference material made possible by the Virginia Coastal Program," states Decker.*

- As Virginia's coastal population grows, we are placing more and more demands on our near shore shallow waters. As the types and frequency of uses increase, so does the potential for conflicts. How will we decide which use wins? The Virginia Coastal Program brought this question to the Virginia Institute of Marine Science (VIMS) in 1999 and funded a study of the **perceived conflict between SAV restoration and clam aquaculture operations** primarily on the Bayside of Virginia's Eastern Shore. The study has grown to encompass all uses and all coastal waters throughout Virginia. VIMS began creating a model which will allow us to see where uses could overlap and where conflicts could arise. VIMS laid out steps for the Virginia Coastal Program to follow as we build the model which includes not only identifying all uses and required environmental conditions for particular uses, mapping out the conditions appropriate for all uses, and showing potential use conflicts, but also weighing the ecological, social and economic value of each activity in areas of potential use conflict, identifying policy options to optimize use of the area, reviewing existing legal and regulatory mechanisms, and involving stakeholders in the development of a use plan.

Goal #10: To promote informed decision-making by maximizing the availability of up-to-date educational information, technical advice and scientific data.

Just a few of the publications produced and funded by the Virginia Coastal Program network:

- Virginia Coastal Program Magazine
- On-line Coastal Program Projects Catalogue
- Shoreline Management in the Chesapeake Bay
- Wetlands Education Curriculum: Lecture Series and Self-Taught Education Units
- Subaqueous Guidelines Handbook
- Virginia Wetlands Management Handbook
- A Guide to the Bay Act
- Guide to Virginia's Laws, Regulations and Requirements for Marine Shellfish Aquaculture
- Coastal Primary Sand Dunes/Beaches Guidelines: Guidelines for the Permitting of Activities Which Encroach into Coastal Primary Sand Dunes/Beaches



- Virginia Erosion and Sediment Control Law, Regulation and Certification Guideline
- A General Guide to Environmental Regulations in Virginia
- Migratory Birds of the Lower Delmarva: A Habitat Management Guide for Landowners
- Native Plants for Conservation, Restoration and Landscaping
- The Bald Eagle of Virginia: An Information Booklet for Land Planners and Managers
- Business and Industry Guide to Environmental Permits in Virginia
- Natural Heritage Resource Maps, Information and Technical Assistance
- Natural Area Source Books and Natural Area Management Plans
- The Neotropical Migratory Songbird Coastal Corridor Study: Special Virginia Edition
- History Underwater: Exploring Virginia's Underwater Historic Resources
- Bayscapes: Environmentally Sound Landscape Management